CONTENTS

تم الاستعانة ببعض المخططات من كتاب DECISION MAKING

للمساعدة ف الوصول الى التشخيص الصحيح

HISTORY

good history = good doctor

١- طريقة أخذ التاريخ المرضي من أهل الطفل أو الطفل هى أهم خطوة نحو التشخيص الصحيح

٢ - حاول دايما ما تكونش متسرع وتتجه إلى الفحص قبل ما تاخد الهيستوري كويس

٣- حاول تاخد الهيستوري من الشخص الملاصق للطفل أو الطفل نفسه

٤- حاول دايما تكون دقيق في أسئلتك يعني مثلا ما تقولش هل الطفل عنده امساك لكن هتقول اخر مرة عمل حمام براز كانت امتى؟

٥ - حاول دايما تبرز اهتمامك بالحالة وبالأهل وتبني علاقة جيدة بينك وبينهم

٦ - احترم شكوى الأم وفي نفس الوقت بعض الأمهات بتبالغ فلازم تكون واخد بالك إذا تعارض كلام الأم مع الفحص الطبي والمنطق فلا قيمة له

٧- تسجل اسم الطفل ،وزنه،عمره وتاريخ الكشف وميعاد الإستشارة

ميعاد الاستشارة بتحدده حسب حالة الطفل

ولازم تفهم الأم اذا ساءت حالة الطفل ترجع ليك فورا

If child has any new problem asses the child as at initial visit

٩ - عينك تكون على الطفل وانت بتاخد الهيستوري وتلاحظ حالته العامه

Look before touching

Which complaint is most upsetting?

١٠ - تكون صريح مع أهل الطفل لو الحالة خطيرة وضح للأهل عشان يهتموا بالعلاج ماتكونش الحاله التهاب رئوي وتقول نزلة شعبية

١١- لوالحاله هتاخد وقت فى علاجها لازم توضح ده لأهل الطفل

١٢-لازم تسأل عن اذا ما كان الطفل عنده حساسية لأى دواء أم لا

١٣-وضح للأهل جرعة الدواء وطريقة استخدامه والتعليمات الخاصه بالدواء والمرض وتأكد من فهمهم لها

١٤-تنبه على الأهل حفظ الأدوية بعيدا عن متناول الأطفال

١٥-وضح خطك ف الروشتة خاصة اذا كان اسم الدواء متشابه مع اسم دواء تاني

Ues the least possible number of drugs

١٢-معرفة الأم بالقواعد الثلاثة للرعاية المنزلية للطفل المريض

-الاستمرار ف التغذية والرضاعة الطبيعية

-اعطاء المزيد من السوائل

- متى تعود فورا للاستشارة

HOW TO REACH THE DIAGNOSIS

1-what is the complaint

2- think of differential diagnosis of this complaint

3-think then ask : what issues and features in history that support each possible diagnosis

Some of possible diagnosis will be eliminated from history collected and only remains shorter list Of differential diagnosis

4- perform general examination carefully

5- examine the child for specific signs of each possible diagnosis

6-perform relevant investigations if still in doubt about diagnosis

- افحص الحلق اخر حاجة لأن الطفل لوبكى مش هتعرف تطلع منه بحاجة وترجع قيمة الكشف :)

-لما تفحص الطفل اربط الأمور ببعضها عشان توصل للتشخيص الصحيح

For example :

-Palpate the liver In wheezy chest case

If enlarged *think in congestive heart failure*

FEVER

RED FLAGS

1- fever with change in conscious level

2-more than 40,5

3-age of infant < 2monts (exclude sepsis)

exclude dehydration fever

4-fever with purpura (DIC ,leukemia)

purpura not blanch with pressure

5-fever in immunodeficiency child (severe malnutrition, long use of steroid)

6-fever with continuous crying (C.N.S infections)

7-fever with neck rigidity and signs of ICP

(bulging anterior fontanel, headache and vomiting)

8-fever with recurrent attacks of convulsions (C.N.C infections)

9-fever more than 2 weeks (FUO)

10- with generalized rash ,red eye ,runny nose or cough (measles)

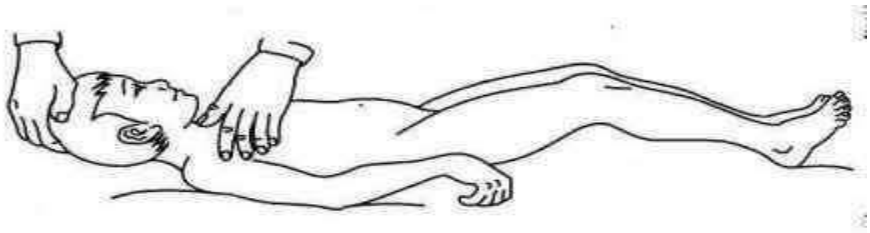
neck rigidity ازاي اكتشف ؟

-during taking history look to see if child moves and bends easily or not

- if you didn't see any movement draw attention of child to umbilicus or toes by Flashlight or tickle his toes

- if you still have not seen the child bend his neck gently support his back and shoulders with one hand ,hold his head by other hand then carefully bend the head forwards toward his chest

-often child with stiff neck will cry when you try to bend the neck



NB:- fever without focus = antipyretic +follow up

- fever > 5 days with antipyretic think in UTI,typhoid or hind abscess

-Risk factor for UTI

1-Female < 6month 2-uncircumcision male

Clinical exclusion of serious focal infections

Bacterial meningitis: signs of meningeal irritation, convulsion , increased ICP

Pneumonia: signs of respiratory distress

Peritonitis: abdominal distension and *generalized* tenderness

Osteomyelitis or arthritis : focal tenderness , swelling and limitation of movements

Evidence of CNS infections

One or more of the following 5 neurological finding

1-Altered consciousness (may the only neurological manifestations in some cases of encephalitis)

2-Convulsions : focal or generalized tonic clonic

3-Increased intracranial pressure :

severe persistent vomiting and or headache, in infants bulging fontanel is the most important sign

4-Features of meningeal irritation:

- neck rigidity

-Brzezinski neck sign : if neck is flexed , the hip will be flexed

-Brzezinski leg sign : if one hip flexed , the other hip will be flexed

-Kerning's sign : if hips are flexed , the knees can not be extended

Bacterial meningitis :

-high fever , vomiting with convulsions or signs of meningeal irritation

(convulsions common in infant ,meningeal irritation common in children)

-the child appears critically sick with marked toxemia

-purpuric skin rash may be the main presentation of meningococcemia

confirm diagnosis by CSF examination

the course may be fulminant and unless urgent proper management is initiated , death or serious neurological sequelae may occur

neurological sequelae

-mental retardation -organic epilepsy

-motor weakness -hydrocephalus

-bilateral subdural effusion

sepsis :

very sick baby with poor suckling ,fever or hypothermia ,lethargy,vomiting

Types of Neonatal Sepsis

Based on the postnatal age at onset, neonatal sepsis can be classified into:

Early onset (first 7 days of life)

-Usually it is a fulminant, multisystem infection, acquired by vertical transmission from the mother and with a higher case fatality rate than late-onset sepsis.

Late onset (between >7 days to 3 months of life)

-It is usually more insidious but may have an acute onset and either nosocomial or community acquired.

Very late (>3 months of life)

-It affects premature VLBW infants who are in the NICU and often is caused by Candida species or by commensal organisms, such as coagulase-negative staphylococci (CONS).

-Usually it is associated with prolonged instrumentation, such as indwelling intravascular lines and endotracheal intubation.

Risk factors

-Premature rupture of membrane

-Maternal infections -Chorioamnionitis

-Endotracheal intubation -Umbilical catheterization

-Tube feeding

high index of suspicion is required to identify and evaluate at-risk infants.

laboratory finding suggestive of neonatal sepsis

-total white cell count below 5000 or above 30000

-ESR above 15 mm/first hour -CRP above 20 mg/liter

-Identification of the causative organism by appropriate culture

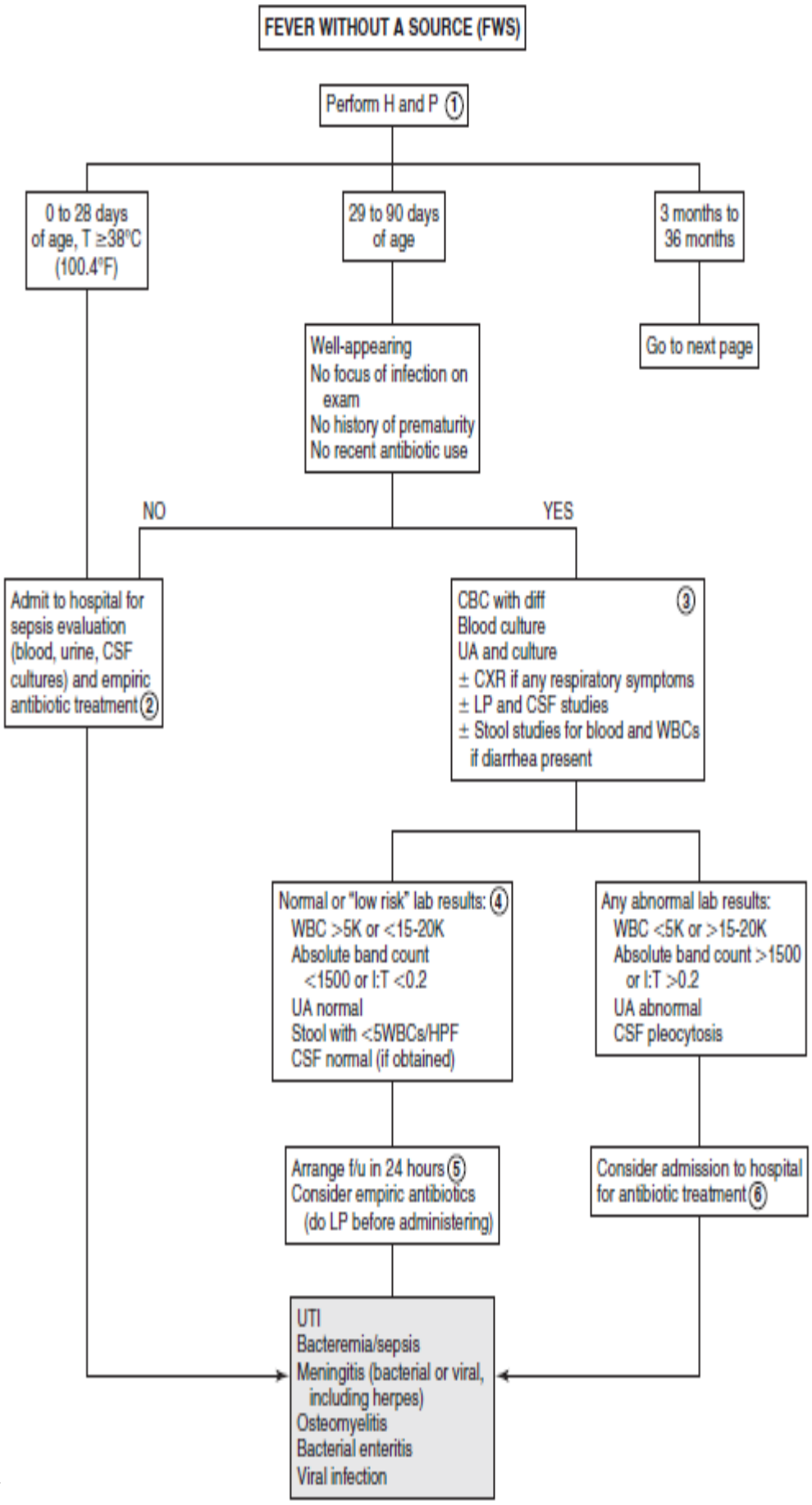
Complications

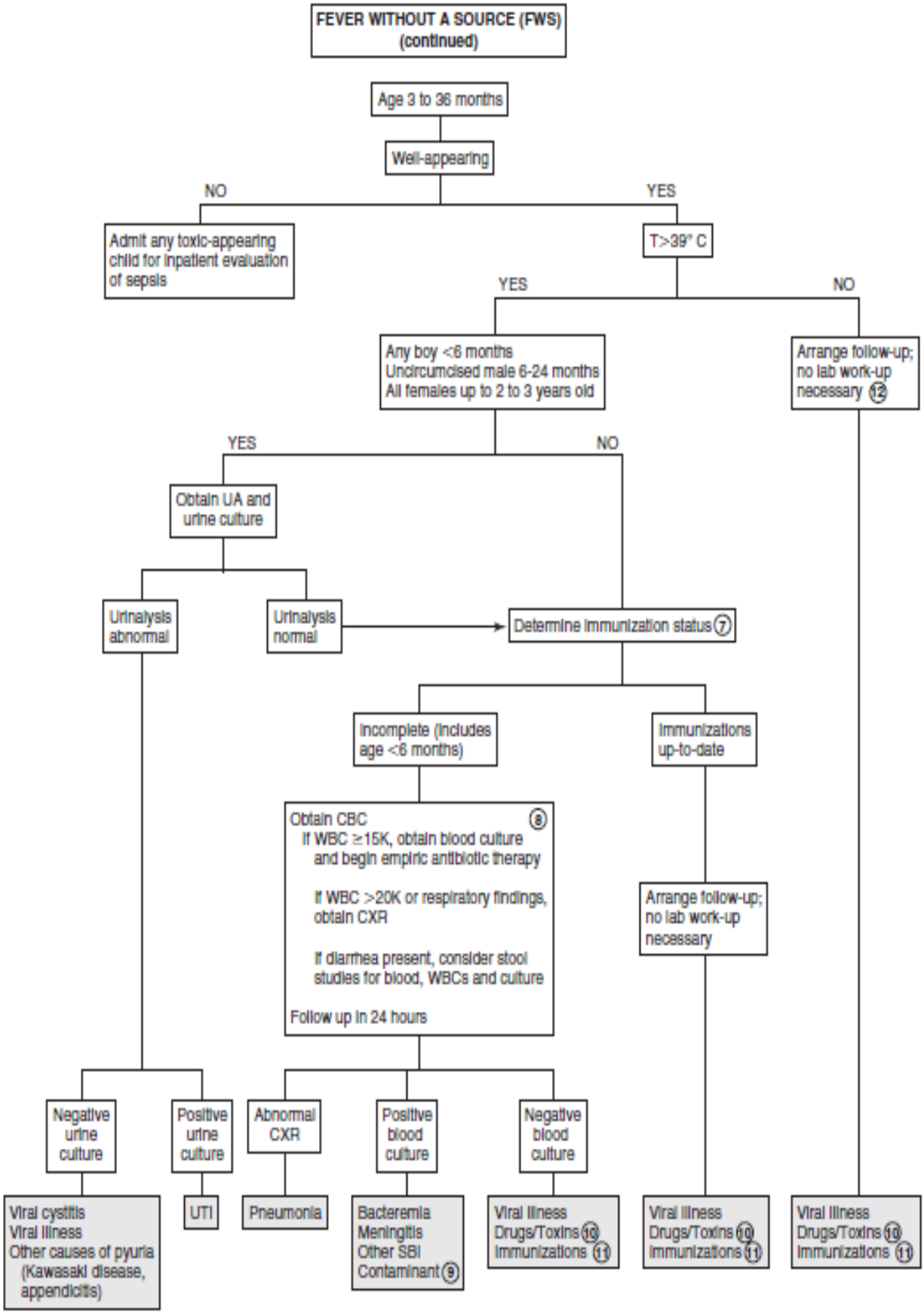
-**serious focal infections** :as meningitis, pneumonia

-***Septic shock*** ***-Septic renal failure***

-Serious bleeding (DIC)

-Sclerema : skin hardening


FEVER WITHOUT A SOURCE (FWS)
Perform H and P ①
0 to 28 days of age, T ≥38°C (100.4°F)
29 to 90 days of age
3 months to 36 months
Go to next page
Well-appearing
No focus of infection on exam
No history of prematurity
No recent antibiotic use
NO
YES
Admit to hospital for sepsis evaluation (blood, urine, CSF cultures) and empiric antibiotic treatment ②
CBC with diff ③
Blood culture
UA and culture
± CXR if any respiratory symptoms
± LP and CSF studies
± Stool studies for blood and WBCs if diarrhea present
Normal or "low risk" lab results: ④
WBC >5K or <15-20K
Absolute band count <1500 or I:T <0.2
UA normal
Stool with <5WBCs/HPF
CSF normal (if obtained)
Any abnormal lab results:
WBC <5K or >15-20K
Absolute band count >1500 or I:T >0.2
UA abnormal
CSF pleocytosis
Arrange f/u in 24 hours ⑤
Consider empiric antibiotics (do LP before administering)
Consider admission to hospital for antibiotic treatment ⑥
UTI
Bacteremia/sepsis
Meningitis (bacterial or viral, including herpes)
Osteomyelitis
Bacterial enteritis
Viral infection


FEVER WITHOUT A SOURCE (FWS) (continued)
Age 3 to 36 months
Well-appearing
NO
YES
Admit any toxic-appearing child for inpatient evaluation of sepsis
T>39° C
YES
NO
Any boy <6 months
Uncircumcised male 6-24 months
All females up to 2 to 3 years old
Arrange follow-up; no lab work-up necessary (12)
YES
NO
Obtain UA and urine culture
Urinalysis abnormal
Urinalysis normal
Determine immunization status (7)
Incomplete (includes age <6 months)
Immunizations up-to-date
Obtain CBC (8)
If WBC ≥15K, obtain blood culture and begin empiric antibiotic therapy
If WBC >20K or respiratory findings, obtain CXR
If diarrhea present, consider stool studies for blood, WBCs and culture
Follow up in 24 hours
Arrange follow-up; no lab work-up necessary
Negative urine culture
Positive urine culture
Abnormal CXR
Positive blood culture
Negative blood culture
Viral cystitis
Viral illness
Other causes of pyuria (Kawasaki disease, appendicitis)
UTI
Pneumonia
Bacteremia
Meningitis
Other SBI
Contaminant (9)
Viral illness
Drugs/Toxins (10)
Immunizations (11)
Viral illness
Drugs/Toxins (10)
Immunizations (11)
Viral illness
Drugs/Toxins (10)
Immunizations (11)

REFUSING OF WATER DRINKING ,EATING OR BREAST FEEDING

طبعا دي حاجة خطيرة جدا لكن لازم تاخد بالك لأن أغلب الأمهات بتبالغ وتقول الولد قاطع الأكل والشرب أو مابيرضعش ***فلازم تتحقق من الكلام دة*** وتقول للأم ترضعة أوتاكله أو تشربه حاجة قدامك

anorexia and refusing ولازم تفرق ما بين

لأن سدة النفس موجودة مع معظم الأمراض والطفل بيشرب وياكل ويرضع لكن على غير المعتاد

conscious levelطبعا اللي يعمل كدة حاجه أثرت على

1-C.N.S infections as meningitis ,encephalitis

2-sepsis 3-metabolic disorders

NB: refuse of feeding with good general condition = think in

- painful oral ulcers
- food forcing snacks between meals as sweets

CRYING

RED FLAGS

1-continuous crying = major problem

2-infant appears ill

3-high pitched crying

-history and physical will yield a diagnosis in majority of crying infants.

- history should include birth history , past medical - history, good review of symptoms, plus a social, developmental, and feeding history with good unclothed physical examination is essential.

-Labs or imaging based on positive data of history and physical examination

crying ازاى تفكر فى حالة

- non organic causes:

-infantile colic (evening crying gradually disappears at the age of 3-4 months)

-physiological needs(hunger,thirst,need calcium)

-psychological needs : to gain sufficient attention (from age 6 months)

-environmental causes : hot or cold environment , insect bites , uncomfortable diapers

- organic causes : (**infant appears ill**)

A.***with fever***

-otitis media (*pulling his ear*, redness, opacity, and bulging of TM) (common)

-UTI (dysuria)

Risk factor for UTI -Female < 6month -uncircumcision male

-early pneumonia (*respiratory distress*)

-meningitis (*neck rigidity*)

-septicemia (*appears ill with bad general condition)*

B. *without fever*

-milk allergy(*after formula ,cows milk and breast feeding*)

-maternal diet containing irritant foods as spices

-incarcerated inguinal hernia (*inguinal swelling*)

-intestinal obstruction (*bilious vomiting*)

-testicular torsion (*history of trauma*)

-sever napkin dermatitis

-lactose intolerance (persistent diarrhea with PH of stool below 5)

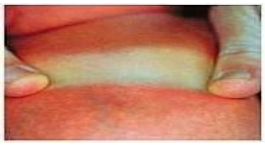
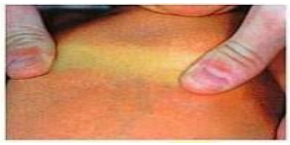
-bone fracture -neurological disorders as mental retardation

NB : **crying baby**- لا تنسى فتح الحفاضة في حالات

JAUNDICE

-Jaundice is the yellow discoloration of skin, sclera caused by the deposition of bilirubin.

-The most common source of bilirubin is the increased breakdown of hemoglobin.

-Jaundice may lead to kernicterus, which is a neurologic syndrome resulting from the deposition of unconjugated (indirect) bilirubin in the basal ganglia and brainstem nuclei. The toxic blood level for an individual infant is unpredictable, but in general, kernicterus typically occurrs only in infants with a bilirubin 20 mg/dL.

In older infants jaundice should be distinguished from carotenemia(diffuse yellowish-orange skin discoloration caused by ingestion of large amounts of carotene-containing foods(e.g. carrots).

RED FLAGS OF JAUNDICE

1-jaundice at firs 24 hrs of life

2-maternal blood group O and RH negative

3-direct bilirubin ≥2 or ≥20% of total bilirubin

4-total bilirubin ≥15 mg / dl

5-rapid rise of bilirubin level > 5mg / dl / day

6-bilirubin > 95 percentile for age in hours

7- jaundice with poor suckling

8- jaundice with hepatosplenomegaly

9- with red urine and pallor (hemolytic anaemia)

10- appears at soles and hands

11- with Previous sibling received phototherapy

12- with gestational age < 35 weeks

13- with birth weight <1,8 kg

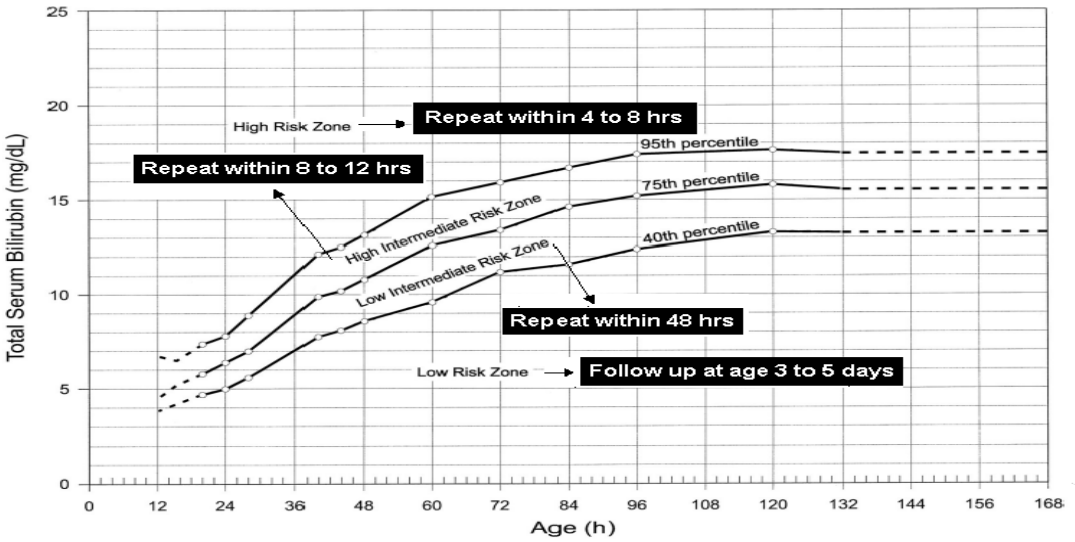
14- with Signs of underlying illness in any infant

(*vomiting, lethargy, poor feeding, excessive weight loss, apnea, tachypnea, or temperature instability*)

NB : prolonged jaundice (>3weaks)

1-breast milk jaundice 2-hemolytic anemia as G6PD

3-hypothyroidism



Hour-specific bilirubin nomogram

Signs and symptoms in jaundiced neonates

Consistent With serious illness

Apneic episodes
Decreased urine output
Distended abdomen
Ill appearance
Irritability
Lethargy
Poor tone
Respiratory distress
Temperature instability
Vomiting

Clinical detection of neonatal jaundice

-*Skin blanching* (preferably in day light) at different sites e.g tip of nose , sternum , abdomen ,palm and soles

-Press by finger to drain capillary blood to observe yellow pigment before capillary refill

Correlation between visible jaundice and bilirubin level

1-Limited to face : 5 mg/di

2-Chest and upper abdomen : 10 mg/di

3-Lower abdomen : 12 mg/di

4-Palms and soles: > 15 mg/di

DIAGNOSTIC APPROACH OF NEONATAL JAUNDICE

History

- **time of onset of jaundice**
- **it decreasing or increasing ?**
- **maternal and family history**
- **RH and ABO typing of parents**
- **previous siblings affected by jaundice or anemia**
- **pregnancy and labor : infections,drugs, trauma**
- **Color of urine and stools**
- **Gestation age**
- **general condition: feeding difficulty**
- **Postnatal history: vomiting, infrequent stooling, delayed breastfeeding**

- **The infant is breastfed or formula-fed**

Examination

- **Jaundice in the skin , how far it reached ?**
- **general condition, activity**
- **skin and mucus membrane or bruises in the body**
- **Size of liver and spleen for hemolytic anemia or infection**
- **Umbilicus for sepsis**
- **Neurological assessment including moro reflex**
- **Signs of hypothyroidism (large anterior fontanelle, delayed passage of meconium,hypothermia, poor tone, mottled skin, and poor feeding)**

Investigations

-Serum bilirubin (direct and indirect) **-Hemoglobin level**

-RH and ABO blood grouping for baby and mother

-Reticulocytes count **-Comb's test for baby and mother**

-Sp*ecific tests* **: blood culture , liver function tests , red cell enzymes studies**

ازاي تفكرفي حالة jaundice؟

- if total bilirubin < 15 mg/dl , direct bilirubin < 2mg/dl and age infant > 24 hrs old = physiological jaundice
= frequent breast feeding and follow up bilirubin level

- if total bilirubin >15 mg/dl and age ifant < 24 hrs old and direct bilirubin > 2mg/dl

think in

-cholestasis -hepatitis -sepsis

-cystic fibrosis -alfa one antitrypsin deficiency

-if total bilirubin >15 mg/dl ,age of ifant< 24 hrs old and direct bilirubin < 2mg/dl

1-do coombs test

- if positive = Rh , ABO incompatibility

- if negative do CBC and see hematocrit value

- if high = polycythemia

- if normal or low think in

-hemolytic anaemia (reticulocytosis)

-breast feeding jaundice

-congenital infections - hypothyroidism -criglar-najjar syndrome

physiological jaundice

-the commonest cause of jaundice as it occurs in up to 40% of normal newborn and 70% of prematures due to transient immaturity of hepatic conjugation of bilirubin

-appears at second or third day usually less than 12 mg/di in full term and 15 mg/di in prematures usually subside within one week of onset.

good general condition with good activity and suckling power

hemolytic neonatal jaundice

-appears at birth or during first day

serum bilirubin may rise to reach serious level

-anemia is evident clinically and hemoglobin level may reach below 6mg/di

-general condition usually affected

RED FLAGS IN NEONATES AT BIRTH

1- APGAR score < 4 at 5 minute

2- birth weight <1,8 kg

3-gestation age < 35 weeks

4-hyperbilirubinemia >20 mg dl

5-serious infections as sepsis

6- metabolic problems *as symptomatic hypoglycemia and hypocalcaemia*

7-seizures

8- twin to twin transfusion

9- major morbidities as chronic lung disease or intraventricular hemorrhage

10-abnormal neurological examination

11- meconium aspiration with non vigorous crying

12-Life threatening congenital anomalies as

Tracheoesophageal fistula : (*vomiting , choking and cyanosis on feeding,failure to pass nasogastric tube to stomach* ***)***

13-Diaphragmatic hernia : *respiratory distress , mediastinal shift and scaphoid abdomen*

14-Intestinal obstruction: bile stained vomiting and abdominal distension

In imperforate anus : inability to pass thermometer through the anal canal

*(Delayed passage of meconium beyond 48 hrs****)***

15-Meningomyelocele : back swelling

16-Congenital cyanotic heart disease *: central cyanosis with or without murmurs Chest x-ray and echocardiography are necessary*

17-Renal agenesis : anuria *(Delayed passage of urine beyond 24 hrs)*

CHECKLIST FO EXAMINATION OF THE NEWBORN

1-ABC

Normal heart rate 120 – 160

Respiratory rate normally < 60/minute

2-Apgar score at 1 and 5 minute after birth

3-Weight , length and head circumference measurement

4-Gestational age assessment

5-Colour of skin and mucus membranes (*cyanosis, jaundice and pallor****)***

6-Cry :vigorous or weak

7-Back : midline defect , tuft of hair

8-Dysmorphic features , any congenital anomaly

9-Body systems : heart , abdomen , chest , genitalia

10-Neurological assessment : tone , neonatal reflexes, seizures and movements

11-Temperature (rectal) to exclude imperforate anus normally 36,5 – 37,5 C

12-Mouth,tongue,eyes, ears

13-Fontanelles and skull

14-Limbs , digits ,hip dislocation, palmer crease

15-History should be reviewed

16-maternal medical history : diabetes , drug intake

17-Previous pregnancies

18-Birth : time of birth , type of delivery

condition at birth ,resuscitation

19-follow up after 2-3 days

TABLE 1.3: Normal weight, respiratory and heart rate in children of different age groups

Age	*Weight (kg)*	*RR / min*	*HR / min*
Birth	2.5-3.5	40-60	100-160
3 months	6	30-50	100-160
6 months	8	30-50	100-160
1 year	10	30-40	100-160
2 years	12	20-30	100-150
4 years	15	20	80-130
6 years	20	16	70-120
8 years	25	16	70-110
10 years	30	16	60-100
12 years	40	16	60-100
14 years	50	16	60-100

Neonatal respiratory assessment parameters

Parameter	Comments
Skin color	Pink, cyanotic, pale, dusky, mottled or jaundiced
Breathing	Unlabored or labored, grunting, nasal flaring or retractions
Chest wall	Deformity, symmetrical or asymmetrical movement
Breath sounds	Distant, shallow, stridor, wheezing, or diminished, equal or unequal
Apnea/ bradycardia/ desaturation	Lowest observed heart rate, color, oximeter reading and duration of episode
Secretion	• Amount: scant, moderate or large • Color: white, yellow, clear, green or blood-tinged • Consistency: thick, thin or mucoid
Endotracheal tube	Length at the level of skin

Neonatal neurological assessment parameters

Parameter	Comments
Activity	Quiet, awake, irritable or sleeping
Level of consciousness	Lethargic, alert or sedated
Posture	While observing neck position, look for symmetry between the sides and compare the upper and lower extremities
Movements	Spontaneous, to pain or absent
Tone	Hypertonic, hypotonic, normal or weak
Pupil	• Size: right, left • Reaction: sluggish, brisk or absent
Eye opening	To pain, to sound, none or spontaneous
Cry	Weak, full or high-pitched
Fontanelle (s)	Sunken, bulging or flat
Sutures	Over-riding or separated
Seizures	If present, write a complete description

Evaluation of respiratory distress using Downes' score

Test	Score		
	0	1	2
Respiratory rate	<60/minute	60-80/minute	>80/minute
Retractions	No retractions	Mild retractions	Severe retractions
Cyanosis	No cyanosis	Cyanosis relieved by O_2	Cyanosis on O_2
Air entry	Good bilateral air entry	Mild decrease in air entry	No air entry
Grunting	No grunting	Audible by stethoscope	Audible with ear
Evaluation			
Total	**Diagnosis**		
<4	No respiratory distress		
4-7	Respiratory distress		
>7	Impending respiratory failure; blood gases are required		

Neonatal gastrointestinal assessment parameters

Parameter	Comment
Abdominal shape	Slightly prominent (normal), distended, scaphoid
Abdominal girth	Record the measurement in cm daily
Umbilical stump	• Number of umbilical arteries • Meconium staining • Drying, inflamed, or discharges • Omphalocele
Emesis (or residuals)	Volume and description
Abdominal wall	• Red or discolored, defects • Distended or any visible loops of bowel
Palpation	Soft, tender or rigid liver (normally, liver is palpated 2 cm below costal margin in the newborn)
Bowel sounds	Present, absent, hyperactive or hypoactive

RED FLAGS FOR **THE UMBILICAL STUMP**

1- Redness around umbilicus
2-Unpleasant smell
3-Discharge 4- Bleeding

DEVELOPMENTAL DELAY

RED FLAGS

one weak : absent moro reflex

3months :no smiling responsively

4months :poor head control

6 months :persistent moro reflex

9 months : no sitting alone

12 months : no crawling ,no pincer grip

13 monts :no standing alone

18 month :not walking , no useful speech

3 years : can not follow clear orders

4 years : can not tell his full name

- Developmental delay = serious problems as CNS disorders
- loss of previously acquired skills = degenerative brain disease

- delayed teething : after 12 months

- developmental delay should be assessed in all fields

- **fundus examination** ***to asses vision and audiometry to asses hearing important in most cases with developmental delay***

neurodiagnostic images *are important in diagnosis and follow up of neurological insult*

APPROACH TO CHILD WITH POSSIBLE DELAYED DEVELOPMENT

history

1-ask about the age of acquiring developmental milestones
2-ask about current skills and any regression of previously acquired skills
3-birth history, past medical history and family history
4-are parents having complaints about development
5- observe the child during taking history

Physical examination

1 evaluate developmental skills
- gross motor , fine motor/adaptive, language and social skills)
- alertness,responsiveness, interest in surrounding and concentration
-Vision and hearing
2- developmental screening tests
3-general examination: poor growth , dysmorphic features
5-neurological examination (including neonatal reflexes if age of child less than one year)

APPROACH TO ACHILD WITH DELAYED WALKING

History

1-asses developmental milestones of all fields
2-other gross motor skills : support of neck , sitting, crawling .
3-dietry history
4-family history of late walking

physical examination

1-evaluate developmental skills
2-general examination: poor growth , dysmorphic features
3-neurological examination

Speech delay

-May be constitutional due to maturation delay Self – limited and usually familial

RED flags

1-With neurological manifestations
2-With delay in all development fields
(suggesting mental retardation)
3-With communication difficulties as autism
4-With hearing impairment
5-With family history of deafness
6-Child doesn't produce words by age of 2,5-3 years

LYMPHADENOPATHY

-Lymph nodes are considered enlarged **if their diameter exceeds 1cm for cervical and axillary lymph nodes 1.5cm for inguinal**

-Generalized = > tow lymph node groups

-On physical examination, all areas that may be involved must be palpated, including cervical, preauricular and postauricular, axillary, epitrochlear, inguinal, and supraclavicular.

-Location of the node may be helpful in diagnosis, whether lymphadenopathy is localized or generalized.

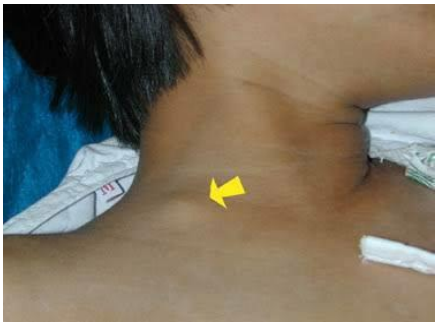
-Localized lymphadenopathy often indicates involvement in the area of lymphatic drainage.

-**Supraclavicular lymphadenopathy** is usually a red flag for mediastinal tumors or infections or for metastatic abdominal tumors.

-**Palpation of the nodes is helpful** with erythema, warmth, and tenderness indicating adenitis.

- Hard, matted, fixed, non tender nodes indicate tumor or fibrosis after acute infection.

RED FLAGS



1- more than 6 weeks

2- more than 2cm

3- supraclavicular lymph node involvement

(Hodgkin lymphoma)

4- with general weakness or loss of weight

(T.B or tumor)

5-painless firm or hard and progressive

6- generalized with hepatosplenomegaly , arthritis and purpura

(exclude leukemia = positive blast cells in CBC)

7- with signs of airway obstruction

(Non - Hodgkin lymphoma)

NB :

during childhood lymph node is larger than in adults

RED FLAGS FOR CHILDHOOD CANCER

-persisteng fever with weight loss : leukemia, lymphoma

-palpable or visible mass : neuroblastoma , wilm;s tumor

-Bone pain : leukemia , bone tumor

-Supraclavicular firm non tender lymphadenopathy : leukemia , lymphoma

-Early morning headache and vomiting : brain tumor

Diagnosis of leukemia:

Leukemia should be considered in any ill child with pallor together with one or more of the following :

-prolonged fever -recurrent infections

-Bruising and petechiae - hepatosplenomegaly

-lymphadenopathy -Bone and joint pains

Investigations

1-CBC

-WBC

Count is variable(increase, decrease or normal)

-Normal count does not rule out leukemia

- *-Lymphoblasts are often seen -thrombocytopenia*
- *-normocytic normochromic anaemia*

2- Bone marrow (essential for diagnosis)

- *Extensive replacement of normal elements by leukemic blast cells*
- ***-Favourable prognosis observed with***
- *-Female sex -Age 1-9 years -WBC : < 50,000*
- *-Absent CNS involvement or mediastinal mass*

Wilm's tumor ;

-observed in the first 5 year of life

-asymptomatic abdominal mass (**unilateral in most cases)**

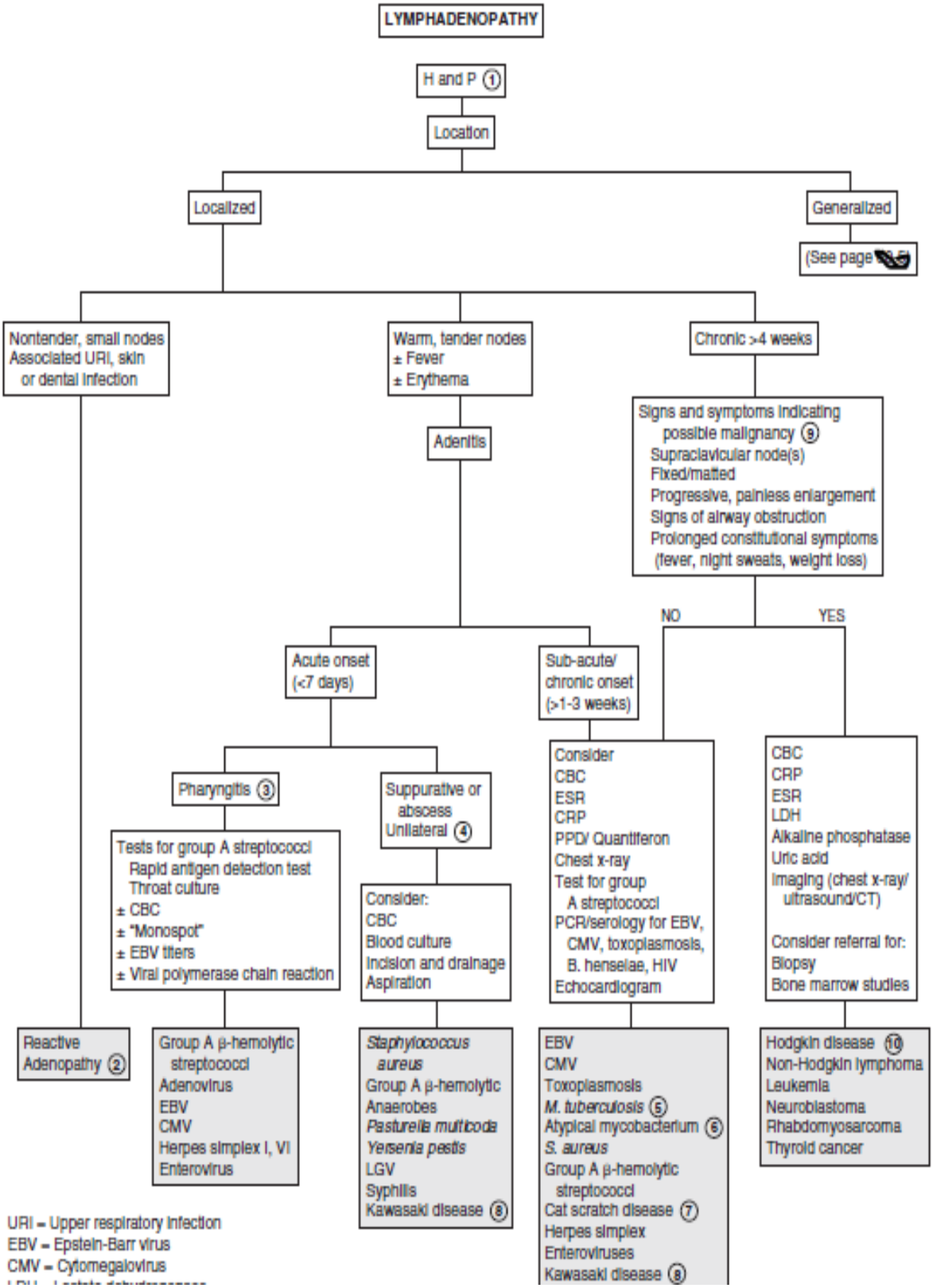
(commonest presentation)

-Other symptoms

Abdominal pain Hypertension Hematuria

Non specific symptoms as weight loss

NB: asymptomatic unilateral abdominal mass Suggestive wilm's tumor


LYMPHADENOPATHY
H and P (1)
Location
Localized
Generalized
(See page
Nontender, small nodes
Associated URI, skin or dental infection
Warm, tender nodes
± Fever
± Erythema
Chronic >4 weeks
Adenitis
Signs and symptoms indicating possible malignancy (9)
Supraclavicular node(s)
Fixed/matted
Progressive, painless enlargement
Signs of airway obstruction
Prolonged constitutional symptoms (fever, night sweats, weight loss)
NO
YES
Acute onset (<7 days)
Sub-acute/ chronic onset (>1-3 weeks)
Pharyngitis (3)
Suppurative or abscess Unilateral (4)
Tests for group A streptococci
Rapid antigen detection test
Throat culture
± CBC
± "Monospot"
± EBV titers
± Viral polymerase chain reaction
Consider:
CBC
Blood culture
Incision and drainage
Aspiration
Consider
CBC
ESR
CRP
PPD/ Quantiferon
Chest x-ray
Test for group A streptococci
PCR/serology for EBV, CMV, toxoplasmosis, B. henselae, HIV
Echocardiogram
CBC
CRP
ESR
LDH
Alkaline phosphatase
Uric acid
Imaging (chest x-ray/ ultrasound/CT)
Consider referral for:
Biopsy
Bone marrow studies
Reactive Adenopathy (2)
Group A β-hemolytic streptococci
Adenovirus
EBV
CMV
Herpes simplex I, VI
Enterovirus
Staphylococcus aureus
Group A β-hemolytic
Anaerobes
Pasturella multicoda
Yersenia pestis
LGV
Syphilis
Kawasaki disease (8)
EBV
CMV
Toxoplasmosis
M. tuberculosis (5)
Atypical mycobacterium (6)
S. aureus
Group A β-hemolytic streptococci
Cat scratch disease (7)
Herpes simplex
Enteroviruses
Kawasaki disease (8)
Hodgkin disease (10)
Non-Hodgkin lymphoma
Leukemia
Neuroblastoma
Rhabdomyosarcoma
Thyroid cancer
URI = Upper respiratory infection
EBV = Epstein-Barr virus
CMV = Cytomegalovirus

CONVULSIONS

RED FLAGS

1-with signs of meningeal irritation or signs of increased ICP

2-with signs of metabolic disorders as dehydration

3-with history of head trauma

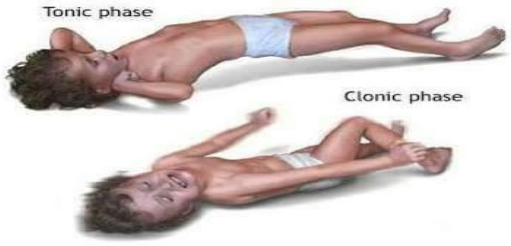
4- with history of drug intake

5- below age of 6months

6-recurrent attacks of convulsions

NB :exclude jitteriness : tremors like movements stopped by holding the infant extremity

-Jitteriness is often seen in infants with hypoglycemia,drug withdrawal, hypocalcemia,hypothermia, and in SGA infants.



Type of convulsion

1-tonic : rigid posturing of extremities and trunk

2- clonic : rhythmic twitching of muscles of face and extermities

3- tonic- clonic : start as tonic then become clonic (commonest type)

4-myoclonic : sudden flexion movement of body and extremities

Distribution of convulsions

1-focal : involving one extremity or one side of the body

2- generalized : involve both sides of the body and always associated with loss of consciousness

Diagnosis of epilepsy may be confused with the following conditions

-breath holding attaks :these transient attacks of apnea and loss of consciousness mainly seen in children between 2-4 years

Syncopal attacks : transient attacks of hypotension and loss of consciousness

Mainly seen in children above 10 years

Paroxysmal vertigo :

Benign condition mainly seen in children between 1-3 years

The child falls down but without loss of consciousness ..nystagmus and vomiting are commonly associated

لذلك لازم اتاكد ان اللى حصل تشنج من خلال:

1-change in level of conscious
2-upward deviation of eye
3-confused or headache after this
4-behavior changes before this

Febrile convulsion

Commonest in children between 6 month and 5 years

Types:

1-simple : generalized tonic-clonic , less than 15 minutes and occurs only once in 24 hrs

2-complex : focal last more than 15 minute or recurs within 24hrs

-RED FLAGS for subsequent epilepsy

- complex febrile type - family history of epilepsy

- associated neuro-developmental abnormality

N.B:

- Exclude CNS infections

- Orienting parents how to prevent further fits (parents should be prepared to lower body temperature as soon as possible)

- Reassure parents

causes of convulsions

1- with fever

-C.N.S infections (neck rigidity or signs of increased ICP)

-febrile convulsion

(no neck rigidity or signs of increased ICP

and age between 6 month - 5 years)

2- without fever

-structural (genetic) - traumatic -metabolic disorder - drugs -idiopathic -cerebral anomalies - kernicterus -hypoxic ischemic encephalopathy

VOMITING

Remember vomiting is non localizing symptom

لو الأم قالت ابني بيرجع كل حاجة لازم أتحقق وقولها تأكله أو ترضعه أو تشربه قدامي لأن الأمهات بتبالغ

طبعا لازم اسأل عن لون الترجيع ومدته وكم مرة ف اليوم وهل بيحدف لبعيد

وهل مصحوب بإسهال أو تشنجات ولازم أوزن الطفل واشوفه على منحنى النمو وأقارنه بوزنه قبل كدة

RED FLAGS

1-vomiting any thing = major problem

2-vomiting with loss of weight and failure to thrive

3-bilious vomiting with absolute constipation = intestinal obstructions

4-projectile vomiting at first weeks of life with loss of weight =pyloric stenosis

5-hematemesis(asses of severity)

exclude maternal nipple fissure and vitamin K deficiency

6-with morning headache (brain tumor)

7-with signs of meningeal irritation or increased ICP

8-with abdominal pain and history of DM (exclude DKA)

9-with bloody stool without fever (intussusceptions)

10-with abdominal tenderness (surgical abdomen)

11-with history of head trauma

12-with convulsions

13-with jaundice (liver disease)

- pyloric stenosis :

-projectile vomiting usually start at second or third week shortly after feeding (within30 minute) associated with loss of weight and constipation

- visible gastric peristalsis after feeding

- palpable pyloric mass

-confirm diagnosis by ultrasonography and barium meal

- more frequent in boy

- intussusceptions :

acute severe paroxysmal colicky abdominal pain with loud crying, bilious vomiting and red current jelly stool

common between 3 months and 3 years *- misdiagnosed as gastroenteritis with bloody diarrhea (but absence of fever and sudden onset of abdominal pain suggest the diagnosis)*

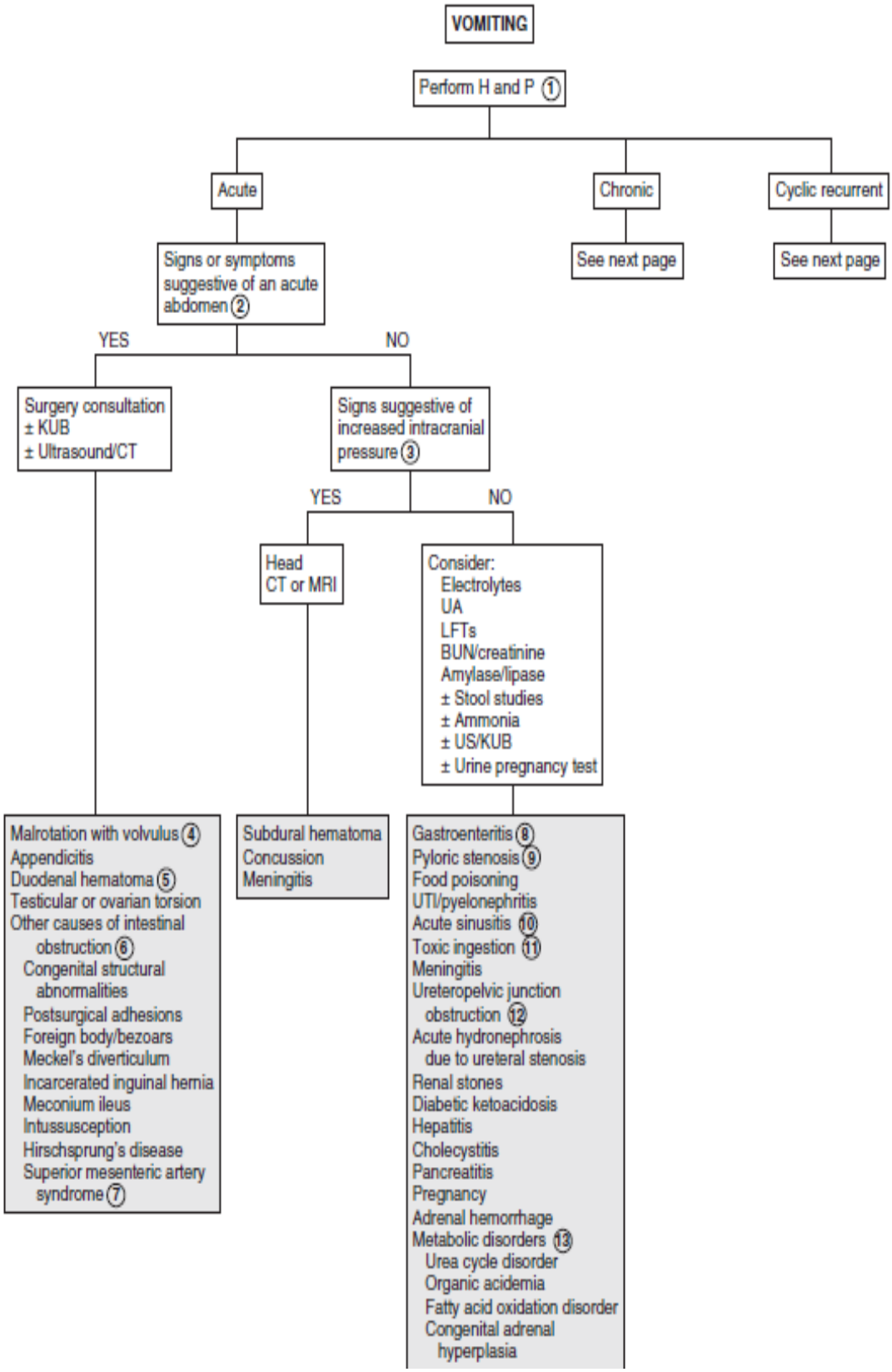
- abdominal examination reveals is sausage-shaped mass mostly in upper right quadrant

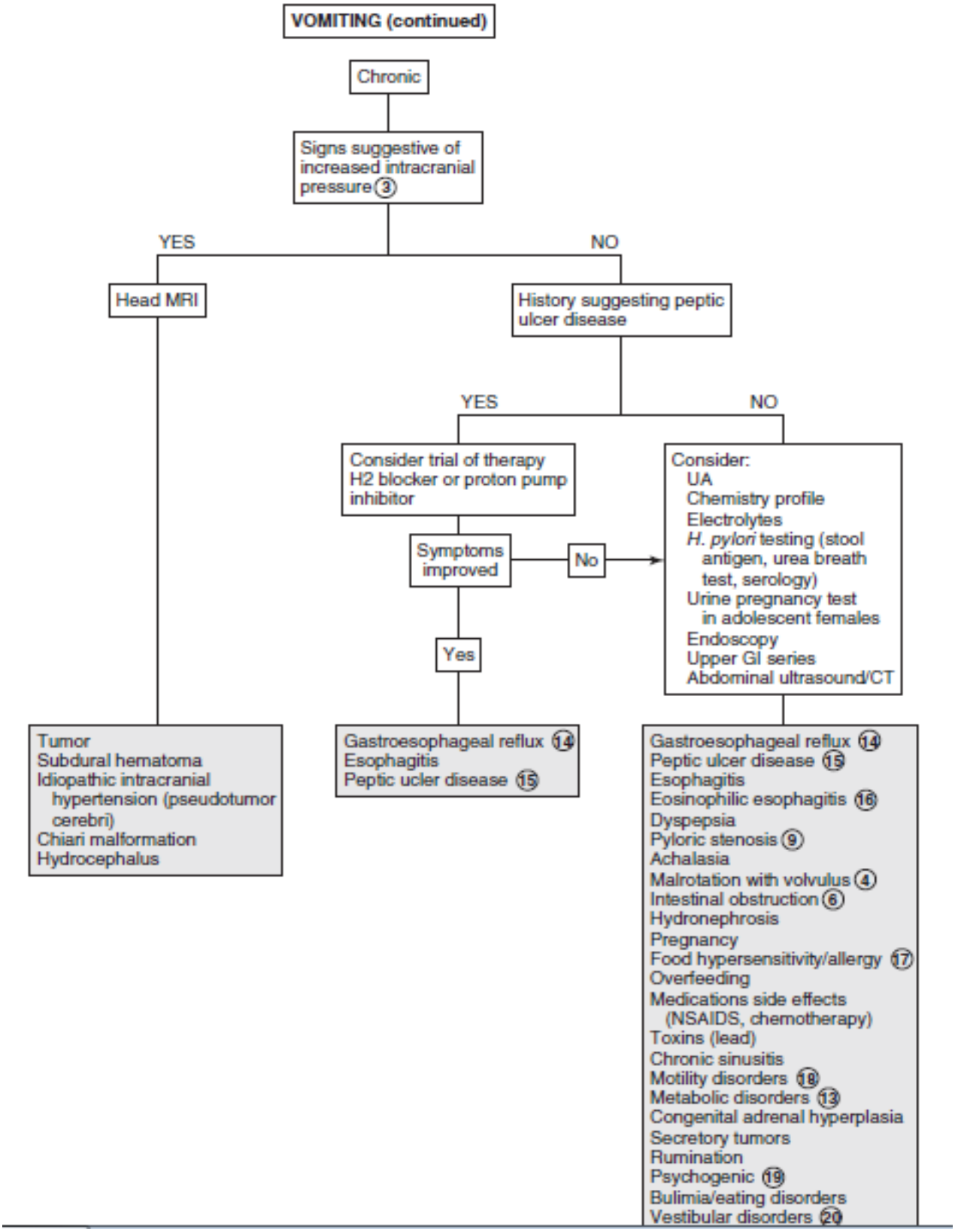
- presence of bloody mucus on finger after rectal examination support the diagnosis

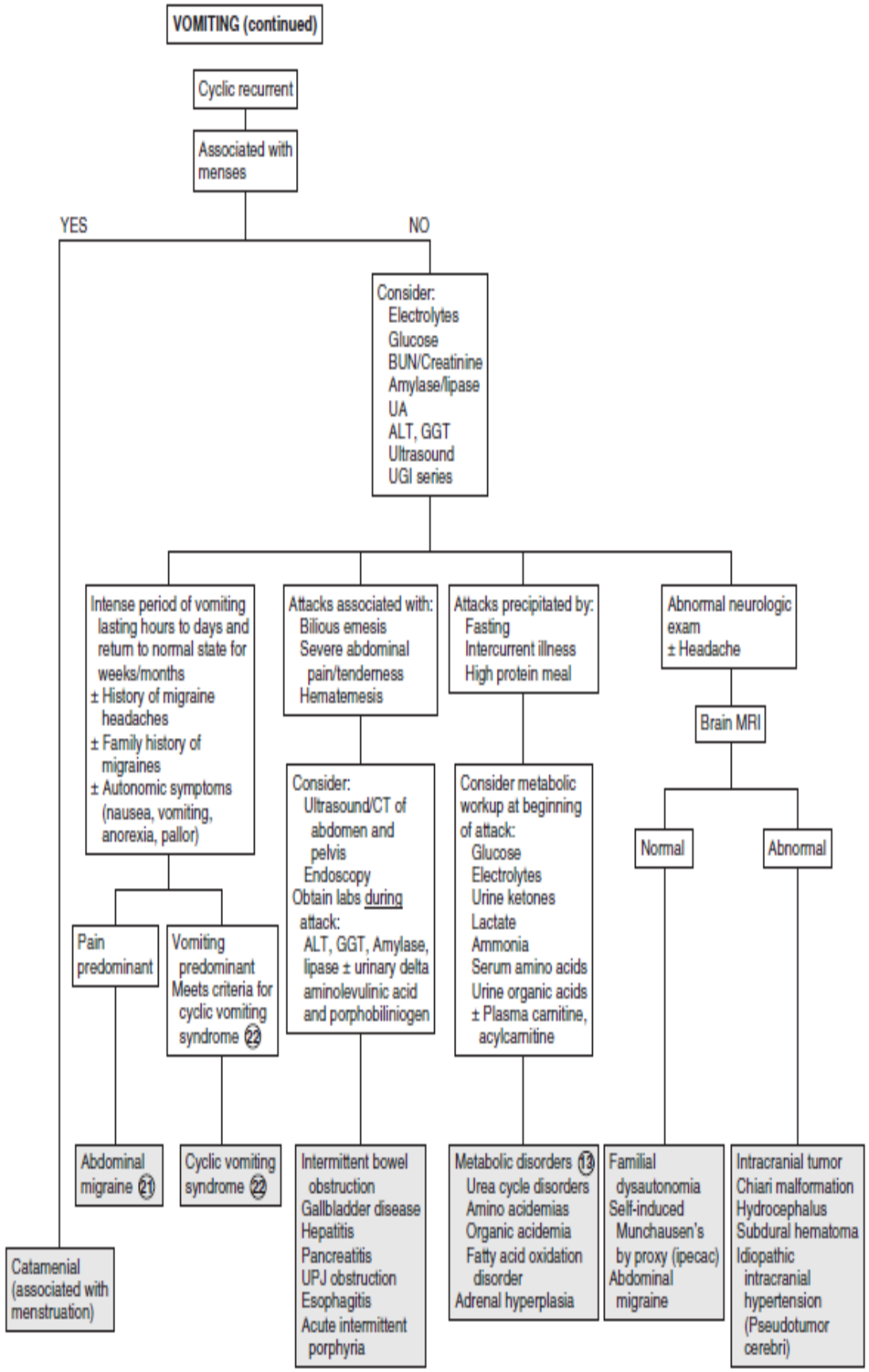
- DKA :

early : vomiting , polyuria , abdominal pain (history of DM)

late : dehydration and acidotic breathing then coma


VOMITING
Perform H and P (1)
Acute
Chronic
Cyclic recurrent
Signs or symptoms suggestive of an acute abdomen (2)
See next page
See next page
YES
NO
Surgery consultation
± KUB
± Ultrasound/CT
Signs suggestive of increased intracranial pressure (3)
YES
NO
Head CT or MRI
Consider:
Electrolytes
UA
LFTs
BUN/creatinine
Amylase/lipase
± Stool studies
± Ammonia
± US/KUB
± Urine pregnancy test
Malrotation with volvulus (4)
Appendicitis
Duodenal hematoma (5)
Testicular or ovarian torsion
Other causes of intestinal obstruction (6)
Congenital structural abnormalities
Postsurgical adhesions
Foreign body/bezoars
Meckel's diverticulum
Incarcerated inguinal hernia
Meconium ileus
Intussusception
Hirschsprung's disease
Superior mesenteric artery syndrome (7)
Subdural hematoma
Concussion
Meningitis
Gastroenteritis (8)
Pyloric stenosis (9)
Food poisoning
UTI/pyelonephritis
Acute sinusitis (10)
Toxic ingestion (11)
Meningitis
Ureteropelvic junction obstruction (12)
Acute hydronephrosis due to ureteral stenosis
Renal stones
Diabetic ketoacidosis
Hepatitis
Cholecystitis
Pancreatitis
Pregnancy
Adrenal hemorrhage
Metabolic disorders (13)
Urea cycle disorder
Organic acidemia
Fatty acid oxidation disorder
Congenital adrenal hyperplasia


VOMITING (continued)
Chronic
Signs suggestive of increased intracranial pressure (3)
YES
NO
Head MRI
History suggesting peptic ulcer disease
YES
NO
Consider trial of therapy H2 blocker or proton pump inhibitor
Consider:
UA
Chemistry profile
Electrolytes
H. pylori testing (stool antigen, urea breath test, serology)
Urine pregnancy test in adolescent females
Endoscopy
Upper GI series
Abdominal ultrasound/CT
Symptoms improved
No
Yes
Tumor
Subdural hematoma
Idiopathic intracranial hypertension (pseudotumor cerebri)
Chiari malformation
Hydrocephalus
Gastroesophageal reflux (14)
Esophagitis
Peptic ucler disease (15)
Gastroesophageal reflux (14)
Peptic ulcer disease (15)
Esophagitis
Eosinophilic esophagitis (16)
Dyspepsia
Pyloric stenosis (9)
Achalasia
Malrotation with volvulus (4)
Intestinal obstruction (6)
Hydronephrosis
Pregnancy
Food hypersensitivity/allergy (17)
Overfeeding
Medications side effects (NSAIDS, chemotherapy)
Toxins (lead)
Chronic sinusitis
Motility disorders (18)
Metabolic disorders (13)
Congenital adrenal hyperplasia
Secretory tumors
Rumination
Psychogenic (19)
Bulimia/eating disorders
Vestibular disorders (20)


VOMITING (continued)
Cyclic recurrent
Associated with menses
YES
NO
Consider:
Electrolytes
Glucose
BUN/Creatinine
Amylase/lipase
UA
ALT, GGT
Ultrasound
UGI series
Intense period of vomiting lasting hours to days and return to normal state for weeks/months
± History of migraine headaches
± Family history of migraines
± Autonomic symptoms (nausea, vomiting, anorexia, pallor)
Attacks associated with:
Bilious emesis
Severe abdominal pain/tenderness
Hematemesis
Attacks precipitated by:
Fasting
Intercurrent illness
High protein meal
Abnormal neurologic exam
± Headache
Brain MRI
Normal
Abnormal
Pain predominant
Vomiting predominant
Meets criteria for cyclic vomiting syndrome 22
Consider:
Ultrasound/CT of abdomen and pelvis
Endoscopy
Obtain labs during attack:
ALT, GGT, Amylase, lipase ± urinary delta aminolevulinic acid and porphobiliniogen
Consider metabolic workup at beginning of attack:
Glucose
Electrolytes
Urine ketones
Lactate
Ammonia
Serum amino acids
Urine organic acids
± Plasma carnitine, acylcarnitine
Catamenial (associated with menstruation)
Abdominal migraine 21
Cyclic vomiting syndrome 22
Intermittent bowel obstruction
Gallbladder disease
Hepatitis
Pancreatitis
UPJ obstruction
Esophagitis
Acute intermittent porphyria
Metabolic disorders 13
Urea cycle disorders
Amino acidemias
Organic acidemia
Fatty acid oxidation disorder
Adrenal hyperplasia
Familial dysautonomia
Self-induced Munchausen's by proxy (ipecac)
Abdominal migraine
Intracranial tumor
Chiari malformation
Hydrocephalus
Subdural hematoma
Idiopathic intracranial hypertension (Pseudotumor cerebri)